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EXAMINER

HWANG, JOON H

ART UNIT

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2166

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/603,037

Applicant(s)

PETCULESCU ET AL.

Examiner

JOON H. HWANG

Art Unit

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-11,13-16,18-24,26,27 and 29-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-11,13-16,18-24,26,27 and 29-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The applicants amended claims 1, 11, 20, 27, and 40 in the amendment filed on 2/25/08.

The claims 1, 3-6, 8-11, 13-16, 18-24, 26-27, and 29-48 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 11, 20, 27, and 40 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claims 13-16, 18-19, and 33-39 are objected to because of the following informalities:

- "A computer-readable medium" in 1st line of claims 13-16 and 18-19 should be "A computer-readable storage medium"; and
- "A data structure" in 1st line of claims 33-39 should be "A computer-readable storage medium".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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5. Claims 10, 27, and 29-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims 10, 27, and 29-31 lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 U.S.C. 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1, 3-6, 8-11, 13-16, 18-24, 26-27, and 29-48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation, "attribute restrictions" in claims 1, 11, 20, 27, and 40 is not supported by the specification. Claims 3-6, 8-10, 13-16, 18-19, 21-24, 26, 29-39, and 41-48 are likewise rejected.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
9. Claims 1, 3-6, 8-11, 13-16, 18-24, 26-27, and 29-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colossi et al. ("Relational extensions for OLAP, IBM Systems Journal, Vol. 41, No. 4, 2002, pages 714-731, Accepted for publication August 19, 2002) in view of Petculescu et al. (U.S. Patent No. 6,473,764).

With respect to claim 1, Colossi teaches defining a dimension comprising a plurality of attributes (i.e., a dimension in OLAP, "OLAP basics" on page 715, fig. 2 on page 717, and fig. 6 on page 724; a dimension object, "Multidimensional layer" on pages 724-725). Colossi teaches assigning each attribute to a respective column of the database having restrictions therein on each attribute (i.e., attribute and join of dimension, fig. 6 on page 724 and "Base/relational layer" on page 725; the restrictions are that the columns are bounded to their respective tables). Colossi teaches defining relationships between the attributes (i.e., dimension hierarchy, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, and "Base/relational layer" on page 725), wherein said relationships are not subject to said attribute restrictions placed on the database (i.e., multiple hierarchies of dimension, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725). Colossi teaches accessing the database via the dimension (i.e., a relational database is accessed via dimension, "OLAP sales cube example" on pages 725-726, fig. 8 on page

726, fig. 6 on page 724, and fig. 5 on page 722). Colossi does not explicitly disclose defining new relationships between said attributes. Petculescu teaches defining new relationships between said attributes, wherein: said new relationships are not subject to attribute restrictions placed on the database; and said new relationships modify at least one relationship between said attributes (i.e., creating a virtual dimension having a hierarchy based on attributes of a base dimension, lines 5-26 in col. 6 and lines 23-33 in col. 2) in order to conserve significant computing effort. Therefore, based on Colossi in view of Petculescu, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Petculescu to the system of Colossi in order to conserve significant computing effort.

With respect to claim 3, Colossi teaches defining at least one hierarchy comprising a sequence of the attributes, at least one of said attributes included in said defining relationship step (i.e., dimension hierarchy, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 4, Colossi teaches each hierarchy defines a drill down path for accessing the database (i.e., Drill-down, fig. 3 on page 718 and left column on page 717).

With respect to claim 5, Colossi teaches a hierarchy contains one attribute (i.e., dimension hierarchy, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 6, Colossi teaches the act of defining the at least one hierarchy is independent of the database (i.e., multiple hierarchies of dimension, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 8, Colossi teaches the database is a relational database (i.e., a relational database in fig. 6 on page 724).

With respect to claim 9, Colossi teaches the dimension is utilized with an on line analysis processing (OLAP) system ("OLAP basics" on pages 715-719).

With respect to claim 10, Colossi teaches an application programming interface (API) comprising means for performing the method of claim 1 (fig. 1 on page 716 and upper right column on page 715).

Claims 11, 13-16, and 18-19 are essentially the same as claims 1, 3-6, and 8-9 except that it sets forth the claimed invention as a computer-readable medium rather than a method and rejected for the same reasons as applied hereinabove.

Claims 20-24 and 26 are essentially the same as claims 1, 3-6 and 8-9 except that it sets forth the claimed invention as a system rather than a method, wherein for claim 20, Colossi further teaches a processor coupled to a storage device, the storage device comprising a database (fig. 1 on page 716, fig. 3 on page 718, fig. 10 on page 727, and left column on page 717), therefore, claims 20-24 and 26 are rejected for the same reasons as applied hereinabove.

Claims 27 and 29-31 are essentially the same as claims 1, 3, 6, and 9-10 except that it sets forth the claimed invention as a system rather than a method and rejected for the same reasons as applied hereinabove.

The limitations of claims 32-39 are rejected in the analysis of claims 1, 3-6, and 8-9, and these claims are rejected on that basis, wherein for claim 37, Colossi further teaches the logical structure is defined independent of restrictions associated with the database (i.e., multiple hierarchies of dimension, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 40, the limitations of claim 40 are similar to the limitations of claim 1 above. Colossi further teaches receiving a data retrieval request including a dimension ("Execute Web service" on pages 728-730). Therefore, the limitations of claim 40 are rejected in the analysis of claim 1 above, and the claim is rejected on that basis.

With respect to claim 41, Colossi teaches providing the retrieved data in response to the data retrieval request (fig. 9 on page 727 and fig. 3 on page 718).

With respect to claim 42, Colossi teaches the data retrieval request further including at least hierarchy comprising a sequence of the attributes, where at least one of said attributes is included in the said at least one defined relationship (i.e., a drill up/down operation request, fig. 3 on page 718 and left column on page 717; dimension hierarchy, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724,

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"Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 43, Colossi teaches each hierarchy defines a drill down path for accessing the database (i.e., Drill-down, fig. 3 on page 718 and left column on page 717).

With respect to claim 44, Colossi teaches a hierarchy contains one attribute (i.e., dimension hierarchy, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 45, Colossi teaches each sequence is defined independent of said restrictions associated with the database (i.e., multiple hierarchies of dimension, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 46, Colossi teaches the relationships between the attributes are defined independent of said restrictions associated with the database (i.e., multiple hierarchies of dimension, "OLAP basics" on page 715, fig. 2 on page 717, fig. 6 on page 724, "Multidimensional layer" on pages 724-725, "Base/relational layer" on page 725, and fig. 7 on page 725).

With respect to claim 47, Colossi teaches the database is a relational database (i.e., a relational database in fig. 6 on page 724).

With respect to claim 48, Colossi teaches the database is capable of being utilized with an on line analysis processing (OLAP) system ("OLAP basics" on pages 715-719).

10. Claims 1, 3-6, 8-11, 13-16, 18-24, 26-27, and 29-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuzhilin et al. (U.S. Publication No. 2004/0103092) in view of Reddy et al. (U.S. Patent No. 6,658,413).

With respect to claim 1, Tuzhilin teaches defining a dimension comprising a plurality of attributes (i.e., DEFINE DIMENSION command, sections [0093]-[0096] on page 9). Tuzhilin teaches assigning each attribute to a respective column of the database (i.e., columns of a relational table correspond to attributes of a dimension, section [0123] on page 11). Tuzhilin teaches defining relationships between the attributes (i.e., a dimension hierarchy, section [0079] on page 7), wherein said relationships are not subject to restrictions placed on the database (i.e., a hierarchy or profiles of a dimension, section [0016] on page 2 and sections [0066]-[0069] on pages 6-7). Tuzhilin teaches accessing the database via the dimension (section [0124] on page 11 and sections [0104]-[0110] on pages 9-10). Tuzhilin does not explicitly disclose a database having restrictions therein on each attribute. However, Reddy teaches a database having restrictions therein on each attribute (i.e., access permissions on members, lines 38-45 in col. 21) in order to provide access security to the database. Reddy also teaches defining new relationships between said attributes, wherein: said new relationships are not subject to attribute restrictions placed on the

database; and said new relationships modify at least one relationship between said attributes (i.e., multiple hierarchies in a dimension, lines 14-31 in col. 10 and line 36 in col. 19 thru line 42 in col. 20). Therefore, based on Tuzhilin in view of Reddy, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teaching of Reddy to the system of Tuzhilin in order to provide access security to the database.

With respect to claim 3, Tuzhilin teaches defining at least one hierarchy comprising a sequence of the attributes, at least one of said attributes included in said defining relationship step (i.e., a dimension hierarchy, section [0079] on page 7).

With respect to claim 4, Tuzhilin teaches each hierarchy defines a drill down path for accessing the database (i.e., a dimension hierarchy, section [0079] on page 7, sections [0123]-[0124] on page 11, and fig. 6).

With respect to claim 5, Tuzhilin teaches a hierarchy contains one attribute (i.e., a dimension hierarchy, section [0079] on page 7).

With respect to claim 6, Tuzhilin teaches the act of defining the at least one hierarchy is independent of the database (i.e., a hierarchy or profiles of a dimension, section [0016] on page 2 and sections [0066]-[0069] on pages 6-7).

With respect to claim 8, Tuzhilin teaches the database is a relational database (i.e., a relational database, section [0124] on page 11).

With respect to claim 9, Tuzhilin teaches the dimension is utilized with an on line analysis processing (OLAP) system (sections [0124] and [0127] on page 11).

With respect to claim 10, Tuzhilin teaches an application programming interface (API) comprising means for performing the method of claim 1 (section [0103] on page 9).

Claims 11, 13-16, and 18-19 are essentially the same as claims 1, 3-6, and 8-9 except that it sets forth the claimed invention as a computer-readable medium rather than a method and rejected for the same reasons as applied hereinabove.

Claims 20-24 and 26 are essentially the same as claims 1, 3-6 and 8-9 except that it sets forth the claimed invention as a system rather than a method, wherein for claim 20, Tuzhilin further teaches a processor coupled to a storage device, the storage device comprising a database (i.e., a relational database, section [0124] on page 11 and fig. 2), therefore, claims 20-24 and 26 are rejected for the same reasons as applied hereinabove.

Claims 27 and 29-31 are essentially the same as claims 1, 3, 6, and 9-10 except that it sets forth the claimed invention as a system rather than a method and rejected for the same reasons as applied hereinabove.

The limitations of claims 32-39 are rejected in the analysis of claims 1, 3-6, and 8-9, and these claims are rejected on that basis, wherein for claim 37, Tuzhilin further teaches the logical structure is defined independent of said restrictions associated with the database (i.e., a hierarchy or profiles of a dimension, section [0016] on page 2 and sections [0066]-[0069] on pages 6-7).

With respect to claim 40, the limitations of claim 40 are similar to the limitations of claim 1 above. Tuzhilin further teaches receiving a data retrieval request including a

dimension (sections [0104]-[0110] on pages 9-10). Therefore, the limitations of claim 40 are rejected in the analysis of claim 1 above, and the claim is rejected on that basis.

With respect to claim 41, Tuzhilin teaches providing the retrieved data in response to the data retrieval request (section [0124] on page 11).

With respect to claim 42, Tuzhilin teaches the data retrieval request further including at least hierarchy comprising a sequence of the attributes, where at least one of said attributes is included in the said at least one defined relationship (sections [0104]-[0110] on pages 9-10).

With respect to claim 43, Tuzhilin teaches each hierarchy defines a drill down path for accessing the database (i.e., a dimension hierarchy, section [0079] on page 7, sections [0123]-[0124] on page 11, and fig. 6).

With respect to claim 44, Tuzhilin teaches a hierarchy contains one attribute (i.e., a dimension hierarchy, section [0079] on page 7).

With respect to claim 45, Tuzhilin teaches each sequence is defined independent of said restrictions associated with the database (i.e., a hierarchy or profiles of a dimension, section [0016] on page 2 and sections [0066]-[0069] on pages 6-7).

With respect to claim 46, Tuzhilin teaches the relationships between the attributes are defined independent of said restrictions associated with the database (i.e., a hierarchy or profiles of a dimension, section [0016] on page 2 and sections [0066]-[0069] on pages 6-7).

With respect to claim 47, Tuzhilin teaches the database is a relational database (i.e., a relational database, section [0124] on page 11).

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With respect to claim 48, Tuzhilin teaches the database is capable of being utilized with an on line analysis processing (OLAP) system (sections [0124] and [0127] on page 11).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOON H. HWANG whose telephone number is (571)272-4036. The examiner can normally be reached on 9:30-6:00(M~F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joon Hwang
Patent Examiner
Technology Center 2100

2/29/08

/Joon H. Hwang/
Primary Examiner, Art Unit 2166